ITEM NO: 099-68YO
DATE: 01 JUL 2001
CATEGORY: II

1. SCOPE:

1.1 Title: Bolted Bonnet Valve; repair (in-line)

2. REFERENCES:

a. NAVSHIPREPFAC Yokosuka Local Standard Items

b. T9074-AS-GIB-010/271, Requirements for Nondestructive Testing Methods

c. S9253-AD-MMM-010, Volume 1, Maintenance Manual for Valves, Traps, and Orifices (Non-Nuclear), User's Guide and General Information

3. REQUIREMENTS:

3.1 Matchmark valve parts.

(V) "INSPECT PARTS FOR DEFECTS"

3.2 Disassemble, clean free of foreign matter (including paint), and inspect parts for defects.

(I) "LIQUID PENETRANT INSPECT" (See 4.3)

3.2.1 Accomplish liquid penetrant inspection of seats (including back seat), discs or gate in accordance with 2.b.

3.2.1.1 Acceptance criteria shall be in accordance with Section 7 of 2.c, except hairline cracks in hard-faced areas of seats and discs or gate are acceptable provided the valve does not show evidence of leakage.

3.3 Repair valve as follows:

3.3.1 Straighten stem to within 0.002 inch total indicator reading. Polish stem to a 32 Root-Mean-Square (RMS) finish in way of packing surface and remove raised edges and foreign matter.

3.3.2 Chase and tap exposed threaded areas.

3.3.3 Clean and spot-in bonnet to body gasket mating surfaces.

3.3.4 Machine, grind, or lap and spot-in gate or discs to seats (including back seat) to obtain a 360-degree continuous contact.

(V)(G) "INSPECT CONTACT"

3.3.4.1 Inspect contact using blueing method.

(I)(G) "VERIFY LEVEL I PARTS" (See 4.4)

3.4 Assemble valve, installing new gaskets in accordance with the manufacturer's specifications, and new fasteners in accordance with Table One, or Table 2 for DDG-51 class.

3.4.1 Install new valve stem packing conforming to MIL-P-24503 and MIL-P-24583 in accordance with Chapter 6 of 2.c.

3.4.1.1 Valve stem clearances that are not within the prescribed tolerances of Table 6-7 of 2.c shall be packed with valve stem packing conforming to MIL-P-17303, Class II, Type E, Symbol 1111 for temperatures greater than 500 degrees Fahrenheit and with valve stem packing conforming to MIL-P-24377 for temperatures 500 degrees Fahrenheit or less.

3.4.2 Pack valves of systems other than feedwater and condensate with valve packing conforming to MIL-P-24396, Type B.

3.5 Accomplish the requirement of 099-28YO of 2.a for metal spray aluminum coating.

4. NOTES:

4.1 Operational test of valve will be specified in the invoking Work Item.

4.2 Repair of valve operating gear will be specified in the invoking Work Item.

4.3 Documentation on the QA form is not required.

4.4 The paragraph referencing this note is considered an (I)(G) if the valve is Level I and QA Form 2, NON-NUCLEAR MATERIAL ID/CONTROL TAG is required. QA Form for objective quality evidence (OQE) is not required.

TABLE ONE

VALVE BODY MATERIAL

	1/ Alloy Steel	Carbon Steel	2/ Nonferrous
3/ Studs and Bolts to MIL-***DTL***-1222	Grade B-16	Grade B-16	Phosphor Bronze - Any Grade Silicon Bronze - Any Grade Nickel Copper - Class A 4/
Nuts to MIL-***DTL***-1222	Grade 4 or 7	Grade 4 or 7	Phosphor Bronze - Any Grade Silicon Bronze - Any Grade Nickel Copper - Class A or Class B 5/
Socket Head Cap Screws	FF-S-86	FF-S-86	

NOTES:

1/ Alloy steel is of Composition A - 2-1/4 percent Chromium, one percent Molybdenum, Composition B - 1-1/4 percent Chromium, 1/2 percent Molybdenum, and Composition C - Carbon Molybdenum.

2/ Nonferrous Alloy except Aluminum.

3/ Studs shall be Class 2 or 3 fit on the nut end and Class 5 fit on the stud end, except that a Class 3 fit with a thread locking compound may be used where temperatures do not exceed 250 degrees Fahrenheit. The thread locking compound shall conform to MIL-S-22473. Inspect Class 3 fit stud ends in accordance with SAE-J2270.

4/ Fasteners of Nickel Copper Aluminum Alloy shall be the only type used on sea chests and hull valves.

5/ Nuts of Nickel Copper Alloy, conforming to QQ-N-281 Class A or B, or Nickel Copper Aluminum Alloy conforming to QQ-N-286 shall be the only type used on sea chests and hull valves.

TABLE 2

VALVE BODY MATERIAL

	1/ Alloy Steel/Carbon Steel	2/ Nonferrous
3/ Studs and Bolts to MIL-***DTL***-1222	5/ For services up to and including 650 degree Fahrenheit (F); Grade 5 steel	4/ 5/ Phosphor Bronze - Any Grade Silicon Bronze - Any Grade Nickel Copper - Class A
	For services in 1,000 degrees F; grade B-16	
	For services to 775 degrees F; Grade B-16	
	For services in which JP-5, lubricating oil, or inflammable gas or liquid of any kind, regardless of pressure and temperature, which are within 3 feet of hot surfaces (above 650 degrees F) and where steel tubing is required; Grade 2, 5 or 8 steel	
	Bolting subject to sea water corrosion (other than hull integrity bolting; for hull integrity bolting see Note 4) Connections in contact with bilge regions. Where strength requires ferrous bolting and is exposed to the weather; Class A Nickel-Copper alloy to QQ-N-281 or silicon bronze to ASTM B98 with dimensions of MIL-***DTL***-1222. Where greater strength is required, use Nickel-Copper-Aluminum alloy QQ-N-286.	
Nuts to MIL-***DTL***-1222	5/ For services up to and including 650 degrees F; Grade 5 steel	Phosphor Bronze - Any Grade Silicon Bronze - Class A or Class B 4/ 5/
	For services to 775 degrees F; Grade 2H or 4 steel	
	For services to 1,000 degrees F; Grade 4 steel	
	For services in which JP-5, lubricating oil, or inflammable gas or liquid of any kind, regardless of pressure and temperature which are within 3 feet of hot surfaces (above 650 degrees F) and where steel tubing is required; Grade 5 or 8 steel	
	Nuts subject to seawater corrosion. Connections in the bilge regions. Where strength requires ferrous material and is exposed to the weather; Class A or B Nickel-Copper alloy to QQ-N-281 or Silicon Bronze to ASTM B98 with dimensions to MIL-***DTL***-1222.	

TABLE 2 (CONTINUED)

NOTES:

1/ Alloy steel is of Composition A - 2-1/4 percent Chromium, one percent Molybdenum, Composition B - 1-1/4 percent Chromium, 1/2 percent Molybdenum, and Composition C - Carbon Molybdenum.

2/ Nonferrous Alloy except Aluminum.

3/ Studs shall be Class 2 or 3 fit on the nut end Class 5 fit on the stud end except that a Class 3 fit with a thread-locking compound may be used where temperatures do not exceed 200 degrees Fahrenheit. The thread-locking compound shall be in accordance with MIL-S-22473. Inspect Class 3 fit stud ends in accordance with SAE-J2270.

4/ Fasteners of nickel copper alloy shall be the only type used on sea chests and hull valves.

5/ Where these materials would constitute part of a galvanic couple, proposals for alternate materials shall be submitted for approval.